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Notes on the Skull Characters of *Allognathosuchus polyodon*[1]

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Allognathosuchus polyodon was first described by Cope in 1873 (p. 614) as *Diplocynodus polyodon* and was referred by him to the genus *Crocodilus* in 1882 (p. 981). In 1921 it was made the type of the genus *Allognathosuchus* by Mook. The type of the species is the left ramus of a lower jaw from the Bridger Beds of the Upper Green River region in Wyoming (U.S.N.M. No. 4112).

Skulls of other species of *Allognathosuchus* have been described by various authors, but no Bridger skulls of this genus have been described.

In the American Museum collection is a skull (A.M.N.H. No. 6049) collected by L. S. Quackenbusch from the Bridger Beds of Grizzly Buttes, Wyoming.

While it is not absolutely certain that this skull belongs to the species *Allognathosuchus polyodon,* as the characters of the jaws attached to the skull cannot be compared in detail with the *Allognathosuchus polyodon* type, in so far as comparison can be made, the characters agree. The locality and level are essentially the same as those of the type. The skull is therefore referred to *Allognathosuchus polyodon* (Cope).

This skull is far from complete, but it exhibits definite characters, which permit a description of the species that has hitherto been impossible. It possesses the general form common to allognathosuchid skulls, the length being short and the breadth relatively great. The snout is

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[1] Contributions to the Osteology, Affinities, and Distribution of the Crocodilia, No. 46.

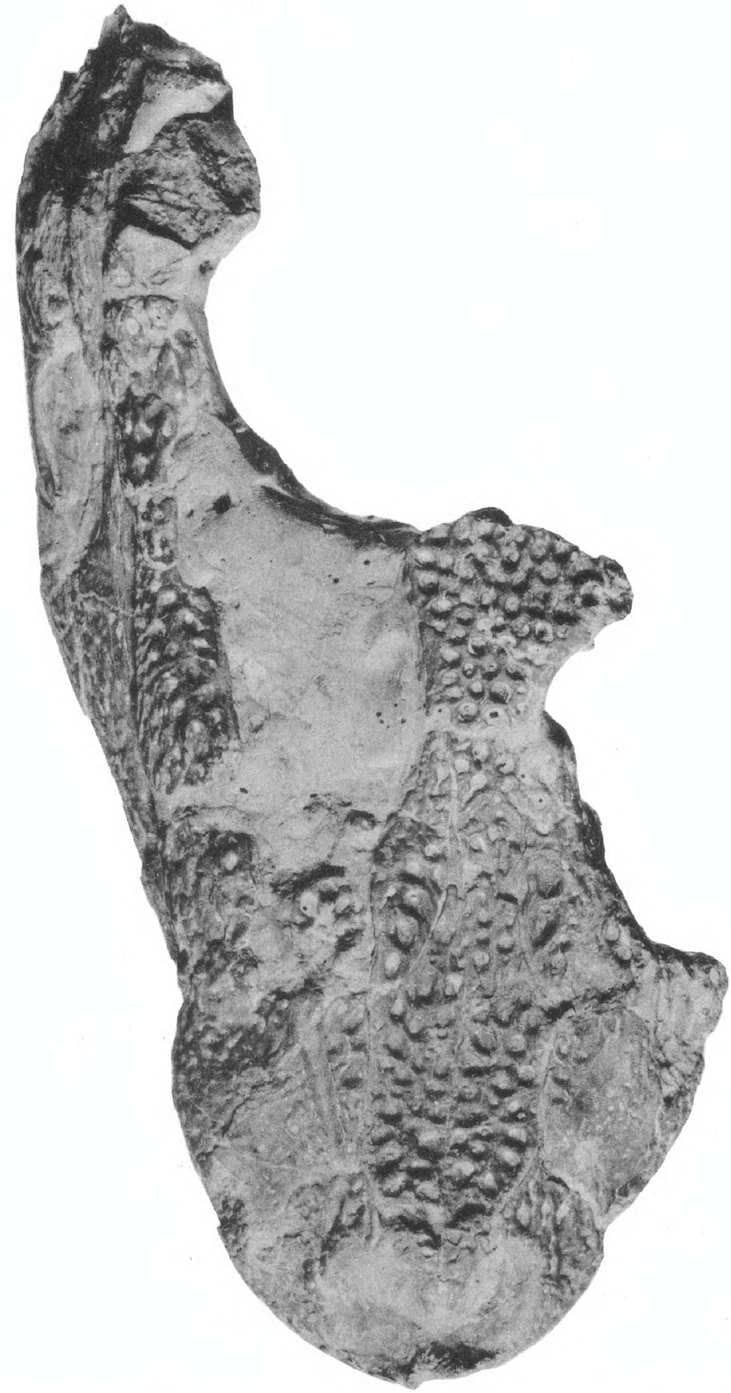

FIG. 1. *Allognathosuchus polyodon* (Cope), skull (A.M.N.H. No. 6049), superior view. Natural size.

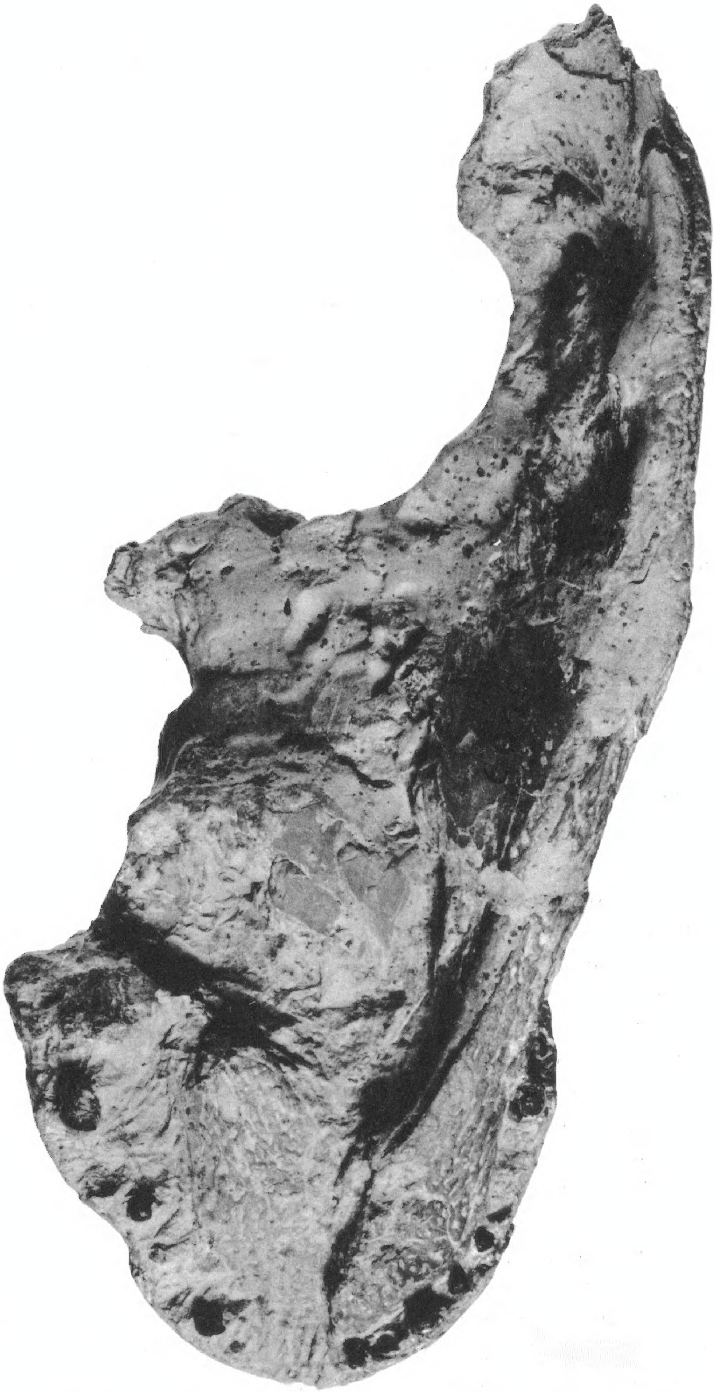

FIG. 2. *Allognathosuchus polyodon* (Cope), skull (A.M.N.H. No. 6049), inferior view. Natural size.

rounded, and there is a very slight indentation where the premaxillo-maxillary suture crosses the external border.

The external narial aperture is large, the breadth being very great. It is close to the anterior border of the skull, being separated from it only by narrow premaxillary plates. The median alligatorid bar is very broad posteriorly; it narrows rapidly in the anterior direction and probably joins a process extending backward from the premaxillaries. In the specimen it is composed only of the anterior tips of the nasal bones.

The orbits would seem to have been large. The premaxillary bones are very short anteroposteriorly; their posterior processes (elements that are usually at least moderately long in crocodilians) are minute.

The maxillary bones have very short contacts with the nasals. The nasal bones widen rapidly from their anterior tips (in the external narial aperture) to the points where the premaxillaries, maxillaries, and nasals meet. They then extend almost straight backward, without expansion or contraction, to the level of the maxillo-nasal-prefrontal contacts, thence narrowing rapidly to their posterior ends. These ends retain a moderate breadth; they lie opposite the middle of the length of the prefrontals.

The anterior process of the frontal is moderately long and also moderately broad. The interorbital plate is moderately broad and flat, and its edges are not uprolled.

There is no descent in level from the surface of the interorbital plate to the surface of the posterior part of the snout, such as one sees in caimans and in some species of *Alligator.*

The lacrimal bones are obscure in the specimen, and their exact boundaries cannot be determined. They were evidently broad and had no contact with the nasals.

The pitting of the bones on the upper surface of the skull is very coarse on the prefrontal bones, slightly less so on the anterior portions of the nasals, and only moderately so on other bones. Apparently no fine pitting was present on the skull.

On the ventral surface of the skull the characters are obscure. There are apparently five teeth in each premaxillary bone, of which number 4 is definitely the largest. The maxillary dentition is uncertain. Apparently number 4 is much larger than any of the anterior maxillary teeth. No posterior maxillary teeth can be seen in the specimen.

In the lower jaw the external mandibular fenestra is small. The symphysis is long for an alligatorid. It must have extended backward to the level of the sixth mandibular teeth at least, and probably to the seventh. The symphyseal portion of the mandible is broad. The splenial bones extend forward at least to the symphysis and probably enter it.

The measurements (in millimeters) of A.M.N.H. No. 6049 are:

Length, posterior end of frontal to tip of snout	112.0
Length of snout (estimated)	72.0
Length of nasal bones	65.0
Length of right prefrontal bone	37.0
Length of frontal bone	45.0
Length of external narial aperture	14.0
Length of mandibular symphysis (estimated)	23.0
Breadth of external narial aperture	28.0
Breadth of skull across premaxillo-maxillary notches	49.0
Breadth of skull across fourth maxillary teeth	68.0
Breadth of snout at base	90.0
Breadth of interorbital plate	13.0
Breadth of interfenestral plate	15.0
Breadth of nasal bones at contacts of nasals, premaxillaries, and maxillaries	22.0
Breadth of nasals at contacts of nasals, maxillaries, and tips of prefrontals	24.0
Breadth of mandibular symphysis (estimated)	39.0

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